

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-18. (Canceled)

19. (Currently Amended) A method of isolating a plurality of cells, ~~wherein the plurality comprises two or more subsets of cells, and wherein~~ a subset of the cells expresses an RNA that is not expressed by another subset of the cells, comprising the steps of:
introducing into cells a plurality of DNAs encoding a plurality of different RNAs, wherein each DNA further encodes a nucleic acid tag sequence, and wherein at least a subset of the plurality of DNAs encodes the same nucleic acid tag sequence;
exposing the cells to a signaling probe that produces a detectable signal upon hybridization to said same nucleic acid tag sequence; and
isolating, in a single application, the cells that ~~produce the signal~~ exhibit at least one selected level of fluorescence at a selected wavelength.

20. (Canceled)

21. (Previously Presented) The method of claim 19, wherein the plurality of different RNAs forms an expression library.

22-24. (Canceled)

25. (Previously Presented) The method of claim 19, further comprising the step of culturing the isolated cells.

26-33. (Canceled)

34. (Previously Presented) The method of claim 19, wherein said plurality of DNAs encodes at least one antisense RNA, shRNA, or siRNA.

35-45. (Canceled)

46. (Withdrawn) A plurality of cells obtainable by the method of claim 19.

47-48. (Canceled)

49. (Withdrawn) The plurality of cells of claim 46, wherein the cells are embryonic stem cells.

50. (Withdrawn) A method for generating a transgenic or chimeric animal comprising the step of using an embryonic stem cell of claim 49 to produce said transgenic or chimeric animal.

51-102. (Canceled)

103. (Withdrawn) A library of cell lines generated by growing the plurality of cells of claim 46.

104-108 (Canceled)

109. (Withdrawn) The library of claim 103, wherein at least two of said cell lines comprise a variable library sequence.

110. (Withdrawn, Currently Amended) The library of claim 109, wherein the variable sequences sequence of said library [[is]]are selected from the group consisting of genomic, genomic untranslated, genomic translated, gene, cDNA, EST, oligo, random, RNA, protein-encoding, protein domain-encoding, peptide-encoding, intronic, exonic, tag, or linker sequence, or combination thereof or recombination thereof, or one or more of the sequences unmodified, mutagenized, randomized, shuffled or recombinated sequences.

111-113. Canceled.

114. (Withdrawn) The library of claim 103, wherein said library is suitable for use in a cell-based screening assay.

115-116. (Canceled).

117. (Previously Presented) The method of claim 19, further comprising separately growing individually isolated cells to generate a plurality of separate cell lines.

118. (Previously Presented) The method of claim 19, further comprising pooling the isolated cells.

119. (Previously Presented) The method of claim 118, further comprising growing the pooled cells.

120. (Previously Presented) The method of claim 19, wherein the plurality of different RNAs are selected from the group consisting of RNAs in the same or a related biological pathway, RNAs that act upstream or downstream of each other, RNAs that have a modulating, activating or repressing function to each other, RNAs that are dependent on each other for function or activity, RNAs that are components of the same complex, and RNAs that encode proteins selected from the group consisting of proteins in the same or a related biological pathway, proteins that act upstream or downstream of each other, proteins that have a modulating, activating or repressing function to each other, proteins that are dependent on each other for function or activity, proteins that are components of the same complex, and proteins from the same protein family.

121. (Currently Amended) A method of isolating cells each expressing RNAs from two or more RNA expression libraries, comprising the steps of:

introducing into cells a plurality of DNAs encoding a first RNA expression library, wherein each DNA further encodes a first nucleic acid tag sequence, and wherein at least a subset of the plurality of DNAs encodes the same first nucleic acid tag sequence;

introducing into the cells a plurality of DNAs encoding a second RNA expression library, wherein each DNA further encodes a second nucleic acid tag sequence, and wherein at least a subset of the plurality of DNAs encodes the same second nucleic acid tag sequence;

exposing the cells to a first signaling probe that produces a detectable signal upon hybridization to said first nucleic acid tag sequence;

exposing the cells to a second signaling probe that produces a detectable signal upon hybridization to said second nucleic acid tag sequence; and

isolating, in a single application, the cells that ~~produce both signals~~ exhibit at least one selected level of fluorescence at a selected wavelength for each of the first and second signaling probes.

122. (Previously Presented) The method of claim 19, wherein the nucleic acid tag sequence comprises multiple target sequences, wherein one signaling probe hybridizes to each target sequence.

123. (Previously Presented) The method of claim 19, wherein the DNA encodes multiple nucleic acid tag sequences.

124. (Previously Presented) The method of claim 19, wherein the DNA encoding said nucleic acid tag sequence is:

- (a) in frame with the DNA encoding said RNA; or
- (b) out of frame with the DNA encoding said RNA.

125. (Currently Amended) The method of claim 19, wherein the DNA further encodes a selection marker, and wherein the method further comprises the step of selecting the cells using utilizing the selection marker after introducing the DNA into the cells but prior to exposing said cells to the signaling probe.

126. (Previously Presented) The method of claim 19, wherein said DNA is operably linked to a conditional promoter.

127. (Previously Presented) The method of claim 126, wherein the RNA encoded by the DNA, or a protein encoded by the RNA, is damaging to the cell when expressed.

128. (Withdrawn) The method of claim 126, further comprising the step of adding to the cells a compound that modulates the expression of said RNA or plurality of RNAs prior to the exposing step.

129. (Currently Amended) The method of claim 19, wherein each DNA of said plurality of DNAs further encodes comprises a second DNA sequence encoding a second RNA, wherein said second DNA sequence is under the control of a conditional promoter.

130. (Previously Presented) The method of claim 129, wherein said plurality of DNAs encodes a plurality of variable test RNAs, and wherein said method further comprises the steps of:

assaying the isolated cells for the presence of the second RNA; and
identifying the test RNA that activates the conditional promoter in cells that express the second RNA.

131. (Withdrawn) A method of identifying a compound that activates a conditional promoter, comprising the steps of:

adding a test compound to the cells isolated by the method of claim 129;
assaying for the presence of the second RNA; and
identifying the test compound that activates the conditional promoter in cells that express the second RNA.

132. (Withdrawn) A method of identifying a test RNA that activates a conditional promoter, comprising the steps of:

assaying for the presence of a second RNA encoded by a second DNA sequence under the control of the conditional promoter in cells isolated by the method of claim 126;
obtaining the cells that express the second RNA; and
identifying the test RNA that activates the conditional promoter.

133. (Withdrawn) The library of claim 103, wherein said library is generated by separately growing the plurality of cells to generate a plurality of separate cell lines.
134. (Withdrawn) The library of claim 103, wherein said library is generated by pooling the plurality of cells and growing said pooled cells.
135. (Withdrawn) The library of claim 103, wherein said plurality of different RNAs, or proteins encoded by the plurality of different RNAs, are selected from the group consisting of RNAs or proteins in the same or a related biological pathway, RNAs or proteins that act upstream or downstream of each other, RNAs or proteins that have a modulating, activating or repressing function to each other, RNAs or proteins that are dependent on each other for function or activity, RNAs or proteins that are components of the same complex, and proteins from the same protein family.
136. (Withdrawn) The library of claim 103, wherein at least one of said DNAs encodes an antisense RNA, an shRNA, or an siRNA.
137. (Withdrawn) The library of claim 103, wherein the nucleic acid tag sequence comprises multiple target sequences, wherein one signaling probe hybridizes to each target sequence.
138. (Withdrawn) The library of claim 103, wherein at least one of said DNAs encodes multiple nucleic acid tag sequences.

139. (Withdrawn) The library of claim 103, wherein the DNA encoding said nucleic acid tag sequence is:

- (a) in frame with the DNA encoding said RNA; or
- (b) out of frame with the DNA encoding said RNA.

140. (Withdrawn) The library of claim 103, wherein at least one of said DNAs further encodes a selection marker.

141. (Withdrawn) The library of claim 103, wherein at least one of said DNAs is operably linked to a conditional promoter.

142. (Withdrawn, Currently Amended) The library of claim 141, wherein the RNA encoded by the DNA operably linked to a conditional promoter, or the protein encoded by said RNA, is ~~lethal or~~ damaging to the cell when expressed.

143. (Withdrawn) The library of claim 103, wherein each DNA of said plurality of DNAs further encodes a second DNA sequence encoding a second RNA, wherein said second DNA sequence is under the control of a conditional promoter.

144. (Withdrawn) The library of claim 143, wherein said plurality of DNAs encodes a plurality of variable test RNAs.

145. (Previously Presented) The method of claim 129, wherein the second RNA, or a protein encoded by the second RNA, is lethal or damaging to the cell when expressed.